

# *Safety First Alert*

**Massachusetts Coalition for the Prevention of Medical Errors**

January 2000

This issue of *Safety First Alert* is a publication of the Massachusetts Coalition for the Prevention of Medical Errors - a unique partnership of providers, clinicians, and regulators - formed in 1997 to improve patient safety and reduce medical errors. *Safety First Alert* is published periodically to alert the health care community to strategies for preventing errors known to have occurred in Massachusetts and around the country. For further information, contact Leslie Kirle, 781-272-8000, ext. 124; fax 781-270-3521; email [Lkirle@mhalink.org](mailto:Lkirle@mhalink.org).

## **Improving Prescription/Order Writing**

*According to reports submitted to the National Coordinating Council for Medication Error and Reporting, illegible handwriting contributes to approximately 15 percent of the errors reported to that program. Other factors that contribute to errors include the use of abbreviations, incomplete directions, lack of patient information, and lack of appropriate dosing information. This Safety First Alert offers some recommendations that are aimed at helping to minimize the opportunity for errors.*

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### **Illegible handwriting**

Whether in an office, clinic, or institutional setting, illegible prescriptions or medication orders are a widely recognized factor contributing to medication errors. The reader of these prescriptions tries to “interpret” the order. This could result in an error if that “interpretation” is incorrect. Illegible prescriptions or orders not only contribute to errors but also contribute to rework. If the pharmacist or nurse cannot read the order, multiple calls may be necessary to clarify the order.

#### ***What can you do to minimize the opportunity for error?***

- Take the time to write legibly. Print if necessary. If your handwriting is such that legibility is a concern, consider having prescriptions typed.
- Have someone else read a sample of your prescriptions to better understand how legible your writing is.
- Expect calls from other health care professional workers if orders/prescriptions are illegible or incomplete. Pharmacists and nurses are being instructed not to “interpret” illegible orders but rather to call the prescriber.
- Implement a physician order entry computer system, in inpatient and outpatient settings, if financially feasible. The computerized system should provide printed copies of medication orders/prescriptions and also have alerts that help screen for dose limits, drug interactions and allergies.

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## Lack of patient information

Lack of appropriate information makes it difficult for pharmacists or nurses to carry out an order. This information includes elements such as weight, date of birth or age and allergies.

### *What can you do to minimize the opportunity for error?*

- Include date of birth or age, weight, and body surface area when appropriate on prescriptions. This will provide information so pharmacists can check the prescribed dose.
- Have pharmacists and nurses use allergy information to check for sensitivities and possible cross-sensitivities.
- Use laboratory data, if available, to determine the appropriate dose.

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## Abbreviations for drug names

Abbreviation of drug names can lead to significant errors. Abbreviations in one health care setting may have a different meaning in another. Drug name abbreviations used on prescriptions to be filled in retail pharmacies may be even more confusing as there may be a greater variety of names to choose from compared with the limited formulary found in many hospitals. Examples are CPZ (intended to be Compazine, generic prochlorperazine) may be misinterpreted as chlorpromazine; HCTZ (intended to be hydrochlorothiazide) may be misinterpreted to be hydrocortisone.

### *What can you do to minimize the opportunity for error?*

- Use the complete spelling for a drug name.
- Do not use abbreviations for drug names.
- Include both brand and generic names for look-alike names.

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## Errors in ordering dose

A common error may be made in the interpretation or conversion of a dose because the metric quantity is not clear or appropriate. Doses of liquid formulations with multiple concentrations have been ordered as milliliters (mL) resulting in the incorrect dose being taken or administered. Errors have also occurred when a solid dosage form, which is available in multiple strengths, is ordered as “take one capsule or tablet” and the appropriate drug strength is not indicated.

### *What can you do to minimize the opportunity for error?*

- Specify the dose using appropriate metric units [e.g. milligrams (mg), micrograms (mCg) or grams (gm)].
- Use the word UNITS not the letter “U” which can be misinterpreted as a 0.
- Precede a decimal expression of less than one unit with a leading zero (e.g. 0.2 mg NOT .2 mg)
- Do NOT use a trailing zero after a decimal (e.g. 2 mg NOT 2.0 mg)
- Include the metric dose after the drug as it serves not only as a check on the dose but also on the appropriateness of the drug for that condition.

- Include mg/kg or mg/m<sup>2</sup> dose upon which the drug dose has been calculated.
- Have providers review the PDR manual to check appropriate dosages if they have not prescribed the drug in over three months.

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## Errors in route

Errors in administration of a drug may occur when the intended route is not included in the order/prescription or when an unapproved abbreviation is used.

### *What can you do to minimize the opportunity for error?*

- Include the route of administration on all medication orders/prescriptions. Do not assume that the caregiver will know the correct or intended route. Dosing may be different based on the route of administration.
- Write out the route clearly. An example of a reported error is “PER OS” intended to mean “by mouth” was interpreted as “left eye.”

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## Abbreviations for directions

Another source of error has been the use of abbreviations for directions. Common abbreviations may have different meanings for providers within the same institution. Instructions for medications intended to be taken daily (written as QD) may be misinterpreted to be four times a day (QID). Similarly, every other day (written as QOD) can be misinterpreted as four times a day (QID).

### *What can you do to minimize the opportunity for error?*

- Write out directions completely.
- Use “DAILY” instead of QD.
- Use “EVERY OTHER DAY” instead of QOD.
- Use prescription blanks with preprinted frequencies from which the prescriber can choose by circling or checking a box.

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## Errors with PRN Orders

Medication orders or prescriptions written as needed (PRN) without a specific frequency have also led to errors as doses may have been taken or administered at inappropriate intervals. Also, not stating the reason for the PRN dosing has contributed to errors.

### *What can you do to minimize the opportunity for error?*

- Include the specific frequency (e.g. Q6H PRN) and dose range (e.g. 30 to 60 mg), when writing PRN orders.
- Include the reason for the drug and dose (e.g. PRN fever; PRN pain).

## Errors with Non-Formulary or Infrequently Used Drugs

A number of errors have been associated with the use of non-formulary or infrequently used medications. One of the reasons identified is that healthcare providers may not have enough familiarity with the product and information sources may be lacking or dated.

### *What can you do to minimize the opportunity for error?*

#### Institutional setting with a formulary:

- Limit the use of non-formulary drugs if a formulary alternative is available.
- Work with the P&T committee of the institution to add the drug to the formulary.
- Ask the Pharmacy to provide drug information in printed form or make information available electronically.

#### Non-institutional setting:

- Understand the drug being used.
- Review, periodically, the drugs you are prescribing. For those that are prescribed infrequently, ensure that you have updated reference material that details prescribing information and indications.
- Consult with a pharmacist when prescribing an infrequently used drug.
- Consult the Managed Care Drug Formulary printed by the Massachusetts Medical Society to identify potential substitutes for non-formulary drugs.
- Encourage patients to use only one pharmacy consistently; the pharmacy of their choice, so that the pharmacists may be able to track all of a patient's medications.

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## Errors with Verbal /Telephone Orders

There have been errors associated with verbal and telephone orders when the prescriber is not clear or the recipient does not understand the prescriber. Verbal orders are spoken orders delivered in person. Telephone orders are spoken orders delivered by telephone.

### *What can you do to minimize the opportunity for error?*

- Limit verbal and telephone orders to emergency situations only.
- Enunciate verbal and telephone orders slowly and distinctly.
- Follow verbal orders, delivered either in person or via telephone, with a request that the person receiving the order repeats it.
- Accompany verbal and telephone orders with backup documentation and signature or other authentication.
- Fax prescriptions as an alternative to verbal communications. However, the quality of faxes should also be tested.

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## Drug Diversion - A Safety Note

Minimize diversion associated with stolen prescription blanks. Drug tampering is another form of drug diversion that can result in a patient receiving the wrong medication. Drug tampering is the purposeful theft and substitution of a drug with an inappropriate drug (e.g., substitution of oxycodone with aspirin).

***What can you do to minimize the opportunity for error?***

- Avoid having the DEA or Massachusetts Controlled Substance number preprinted on the form.
- Ensure that prescriptions are stored in a secure area.
- Use paper with copy protection or deterrents (when copied, the word COPY appears on the copy).
- Ensure that controlled substances are properly secured. Inspect medication packaging regularly for signs of tampering (e.g., tape, staples, cuts, tears, holes, glue, inappropriate labeling).
- Check medication characteristics (e.g., color, size, shape and identifying markings for solid dosage forms, color, viscosity and odor for liquids) prior to administration.
- Create awareness that tampering could be a reason for a patient's report of therapeutic failure (e.g., inadequate pain relief).

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<p>The Massachusetts Coalition for the Prevention of Medical Errors was established to develop and implement a statewide initiative to improve patient safety and minimize medical errors. The Goals of the Coalition are:</p> <ul style="list-style-type: none"> <li>• To establish a mechanism to identify and implement best practices to minimize medical errors;</li> <li>• To increase awareness of error prevention strategies through public and professional education;</li> <li>• To identify areas of mutual interest and minimize duplication of regulatory and Joint Commission for the Accreditation of Healthcare Organizations (JCAHO) requirements so that efforts are focused on initiatives that can best improve patient care.</li> </ul>	<p>List of Participating Member Organizations:</p> <ul style="list-style-type: none"> <li>• AARP</li> <li>• American College of Physicians</li> <li>• Boston University School of Medicine Center for Primary Care</li> <li>• Harvard Risk Management Foundation</li> <li>• Health Care Financing Administration Regional Office</li> <li>• Harvard School of Public Health</li> <li>• Institute for Healthcare Improvement</li> <li>• Joint Commission on Accreditation of Healthcare Organizations</li> <li>• Massachusetts Association of Behavioral Health Systems</li> <li>• Massachusetts Board of Registration in Nursing</li> </ul>	<ul style="list-style-type: none"> <li>• Massachusetts Board of Registration in Pharmacy</li> <li>• Massachusetts Board of Registration in Medicine</li> <li>• Massachusetts Department of Public Health</li> <li>• Massachusetts Extended Care Federation</li> <li>• Massachusetts Hospital Association</li> <li>• Massachusetts Medical Society</li> <li>• Massachusetts Nurses Association</li> <li>• Massachusetts Organization of Nurse Executives</li> <li>• Massachusetts Peer Review Organization</li> <li>• Professional Liability Foundation</li> <li>• PRO Mutual Group</li> </ul>
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